INTERMEDIATE SCIENCE

RELEASED ITEMS

Missouri Assessment Program
Spring 1998

CONSTRUCTED RESPONSE ITEMS

1. Identify three important characteristics of Earth that make it possible for Earth to sustain life.

1. _____

_____

_____

2. Explain the difference between something that is discovered and something that is invented.

_____

_____

_____

_____

Give an example of something that was discovered and an example of something that was invented.

discovered: _____

invented: _____

3. For many plants, the only means of pollination is by wild bees.

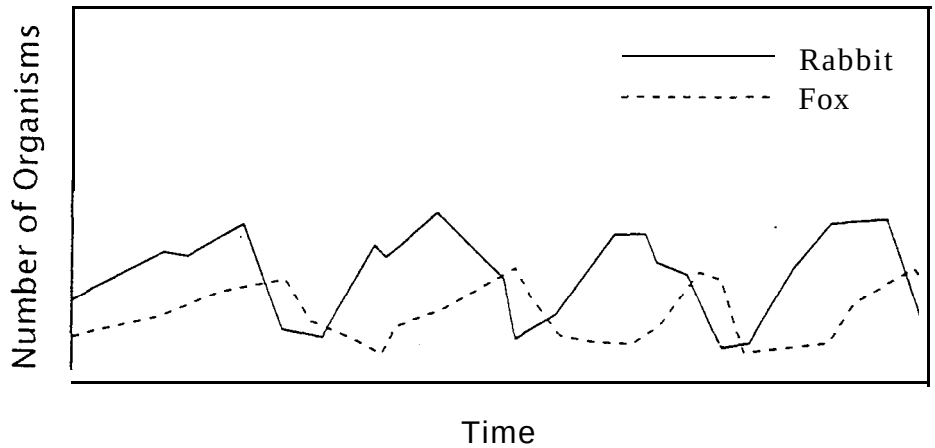
If the natural habitats in which bees make their nests are destroyed, how would this affect a population of the bee-pollinated plants?

Explain your answer.

4. Identify one **defining** characteristic of mammals, and describe how that characteristic helps mammals survive.

5. Explain why lightning rods are made of metals and how they prevent buildings from being damaged by lightning.

6. A study of the population density of rabbits and foxes in a forest ecosystem was conducted over several years. The results were graphed as shown below.



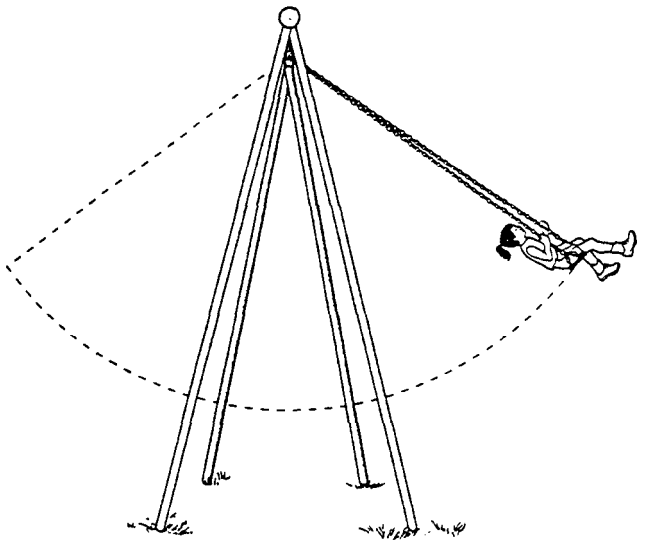
What type of relationship exists between the rabbits and the foxes?

Explain why an increase in the rabbit population is followed by an increase in the fox population.

7. Darwin called the process by which species survive and adapt "natural selection."

Will natural selection have a greater effect on species in an environment that is stable, or in one that is unstable and periodically changing? Explain your answer.

8. Maria is swinging on a swing.



Look at the diagram of the swing. Mark a P on the diagram to show where the swing has the most potential energy and a K to show where the swing has the most kinetic energy.

When Maria stopped pumping, the swing slowed and eventually stopped. Name two forces that slowed down and finally stopped the swing.

1. _____

2. _____

Into what other kind of energy did the potential and kinetic energy change during the time the swing was swinging?

_____

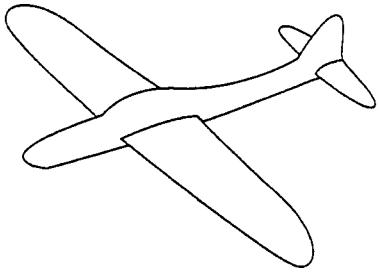
_____

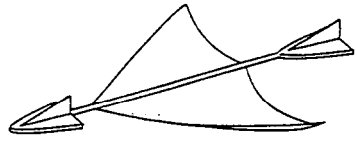
_____

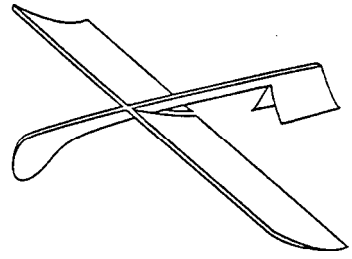
PERFORMANCE EVENT ITEM

Toy Gliders

You have been hired by *K* and *R Toy* Company to test three different plastic airplane glider designs that are intended to lengthen the flight time. Your job is to design an experiment that will test the time each of these gliders will remain in the air after it is released. You must collect enough data to be sure you have identified which glider consistently remains aloft for the longest period of time.







1. Describe three variables in addition to the glider design that might affect how long the glider will remain aloft.

1. _____

2. _____

3. _____

2 In the procedure for your experiment, how will you control each of the variables you listed so that they don't influence the flight of one glider more than the flight of another?

3 Why is it important to control these variables?

4. On the lines below, list the steps in your experiment. Be sure to explain the measurement method you will use. Your steps should include ways to collect enough data so that you can conclude, without doubt, which glider stays aloft the longest.